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whose composition began at about the time of the Buddha (d. c. 400 BC). Sigaléa describes the early medicine recoverable from Vedic and Upaniṣadic sources, its relationship with the nascent Indian philosophical schools, and the formation of the Sanskrit medical canon. In the following thirty chapters he provides a comprehensive account of Indian classical medicine, including the formation of the human body, its relationship to the ecological environment, nosology, diagnosis, prognosis, pathology, and a wide range of therapies, including surgery. The final ten chapters of this part of the book cover subjects such as veterinary medicine, public health, medicine and the law, and the specific contribution to medicine made by India's rich religious heritage, including yoga, Tantra, Buddhism and Jainism. He also examines the relationship between ancient Indian and Greek medical traditions. A final, very brief chapter deals with Indian medicine from 1300 to the present. This is a very interesting period, in which *āyurveda* continued to evolve energetically, and was eventually influenced by, and began to influence, European medical practice; it is also the period in which traditional practitioners have had to come to some accommodation with the modern biomedical model of medicine. In contrast to the detailed treatment of classical doctrines in the earlier chapters, these topics are only touched upon.

The second part of the book deals with the Islamic medical milieu of the Moghul and Sultanate courts, and is based on the biographies, chronicles and memoirs of the rulers, chiefly written in Persian and Arabic. The main organizing principle of this part is the lives of the Moghul rulers from Babur to Aurangzeb, who are described in historical sequence. Chapter nine presents a summary of Islamic medical thinking, and later chapters include interesting biographies of individual court physicians, including a female surgeon from Delhi. The book ends with an account of the

medical information reported by European travellers in India from the sixteenth century onwards.

Both parts of the work are written on the basis of translations and secondary literature, but Sigaléa has made excellent and judicious use of these materials, penetrating the subject to an impressive degree.

This is a book aimed at an intelligent reading public interested in medicine and the East. It might also have a role as a text (taken with others) in an introductory course on Asian medicine, although its cost would unfortunately limit students' access to library copies. It successfully achieves its goal of presenting a rich panorama of Indian medical history in an accessible and attractive format, while remaining intelligent and well-researched throughout.

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C Aufderheide and Conrado Rodríguez-Martín, *The Cambridge encyclopedia of human paleopathology*, Cambridge University Press, 1998, pp. xviii, 478, illus., £75.00, \$100.00 (0-521-55203-6).

An encyclopedia can be defined as: "a book, often in many volumes, containing articles on various topics, often arranged in alphabetical order, either dealing with the whole range of human knowledge or with one particular subject" (P Hanks (ed.), *Collins dictionary of the English Language*, 1979). As such, this book deals with one subject, that of paleopathology (or the study of disease in past populations). On the first page, it is described as "a major reference work for all those interested in the history of disease in human remains", and it fulfils that description. It also, unusually, covers diseases affecting the soft tissues, an

area not generally discussed in other paleopathology texts. This volume is therefore very welcome.

The authors are highly regarded in the field of paleopathology, and this book shows years of dedicated work. The text is divided into fifteen parts: history of paleopathology, pseudopathology, trauma, congenital anomalies, circulatory disorders, diseases of the joints, infectious diseases, diseases of the viscera, metabolic diseases, endocrine and haematological disorders, skeletal dysplasias, neoplastic conditions, the dentition, and miscellaneous conditions, with 36 of the 478 pages given over to the very useful bibliography. Within each section devoted to a condition, the disorders are discussed in clinical context (covering facts such as aetiology, epidemiology and pathogenesis, clinical features and diagnostic criteria), followed by paleopathological evidence.

The distinctive feature of the text is the inclusion of details of disease processes with explanations of how and why lesions occur in the skeleton. Many researchers are coming to realize that lesions seen in skeletal remains may not always be the "classic" extreme examples illustrated in textbooks, and the authors admit too that their book is no exception in using the most chronic and explicit lesions as illustrations! They emphasize the need to consider the variation in severity expression of a disease, and the morphology and frequency of paleopathological abnormalities. It should be remembered that lesion expression may have changed through time, and some disease manifestations may not be represented in the clinical record because the changes may be so subtle as to be invisible to a practising doctor. The other point emphasized is that paleopathological data must be considered within its cultural context, thereby linking biology and culture; as such, it is recognized that multiple factors are at play in the appearance, transmission and maintenance of disease in a population.

The history of paleopathology section covers the Renaissance to the present and deals with how paleopathology has developed from the study of disease in non-human remains to a specialism focusing on populations rather than individuals. Despite its early history, the study of animals (other than humans) has received little attention this century despite the potential problems humans encounter with zoonoses today. Although the book covers a lot of ground, a section on non-human paleopathology and its relevance to humans would have been useful. Pseudopathology, an important section, considers post-mortem effects on the survival and condition of both soft tissue and bone, an awareness of which is key to identifying pathological conditions. Trauma deals with a variety of conditions: fractures, dislocations, weapon wounds, myositis ossificans, decapitation, strangulation, amputation, trepanation, cranial deformation, cautery, bloodletting, scalping and soft tissue injuries, sacrificial victims and mutilation (something for all, with some excellent illustrations). Part 4 ('Congenital conditions') considers a number of disorders; in paleopathology, however, they have tended to be neglected because they are relatively rare. The osteochondroses, osteochondritis dissecans, aortic disease and necrosis are discussed in Section 5 ('Circulatory disease'), another area of paleopathology sadly neglected, whilst Section 6 ('Joint disease') covers disorders which rate the most common of those seen in human skeletal remains. Part 7 ('Infectious disease') documents information on leprosy, tuberculosis, treponematoses (including the theories of evolution in the latter), osteomyelitis, periostitis, fungal, parasitic and helminth infections, and a number of soft tissue infections (plague, cholera, malaria, diphtheria, anthrax, smallpox, measles, rubella and poliomyelitis). Infectious diseases are one of the major scourges of populations today, and were in the past; due to the variety and number of infectious

diseases, this chapter runs to 130 pages. Section 8 covers diseases affecting soft tissues, particularly the viscera and, despite some of the conditions not having yet appeared in the paleopathological literature, the more common conditions today are discussed. Part 9 ('Metabolic diseases') deals with vitamin D related disorders (rickets and osteomalacia), scurvy, osteoporosis, fluorosis, and poisoning. Part 10 is concerned with 'Endocrine disorders', Part 11 with haematological conditions, Part 12 with skeletal dysplasias, Part 13 with neoplasia, and Part 15 with miscellaneous conditions (e.g., Paget's disease, leontiasis ossea, hyperostosis frontalis interna, Harris lines and fibrous dysplasia). Part 14 is devoted to the dentition and is written by Odin Langsjoen. This chapter provides an introduction to oral biology and the diseases which can affect the dental and associated structures; an omission here is the inclusion of dental calculus.

The subjects of each section indicate the thoroughness of the book; all the major conditions are covered and much more. The text is generally well written and clear, and the many black and white illustrations are of a high quality. There are few errors; the caption of Figure 4.10 is incorrectly spelt. Figures 5.2 and 6.8 appear to be upside down, and the caption of Figure 7.2 does not describe the arrowed areas. However, considering the number of figures, these errors are negligible. The bibliography is extensive but a few extra key references could have been included. For example: O Dutour, *et al.*, *The origin of syphilis in Europe: before or after 1493?*, Toulon, 1994; C Hackett, *Diagnostic criteria of syphilis, yaws and treponarid (treponematoses) and of some other diseases in dry bone*, New York, 1976; S Hillson, *Teeth*, Cambridge, 1986, and *Dental anthropology*, Cambridge, 1996; J Anderson and K Manchester on leprosy diagnostic criteria (*Journal of Archaeological Science*, 1987, 14(1): 77–82, and 1988, 15: 51–61); and J Rogers and T Waldron, *A*

*field guide to joint disease in archaeology*, Chichester, 1995.

Although strictly an encyclopedia, it would have been useful to have a discussion (perhaps in the history of paleopathology section) on how the history of disease is studied, that it combines a number of different forms of evidence, that they all have their limitations, and that there are a number of methods available to analyse human remains. Striving to develop a standardized recording system is constant in the study of paleopathology and was stimulated in North America by NAGPRA in 1990 (J Rose, *et al.*, 'NAGPRA is forever: osteology and repatriation of skeletons', *Annual Review of Anthropology*, 1996, 25: 85–103). Other useful references for those interested in methodological considerations and problems in paleopathology are: J Buikstra and D Ubelakar (eds), *Standards for data collection for human skeletal remains*, Arkansas, 1994; J W Wood, *et al.*, 'The osteological paradox: problems of inferring health from skeletal samples', *Current Anthropology*, 1992, 33(4): 343–70; and T Waldron, *Counting the dead: the epidemiology of skeletal populations*, Chichester, 1994. The work perhaps lacks a concluding section which could have dealt with the current status of the study of paleopathology with a suggestion of how it might develop over the next twenty years.

This book will appeal to anthropologists (biological and medical), archaeologists, doctors, dentists, and medical and social historians. It is accessible to people with little or no knowledge of the subject but also to those who have been working in the discipline a long time. It will undoubtedly become a key text in many courses and will grace the bookshelves of people working both with patients today and in reconstructing the history of disease in the past.

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